REMARKS

This paper is intended to be a complete response to the above-identified Office Action. It is believed no fee is due. If fees are required, however, the Commissioner is authorized to deduct the necessary charges from Deposit Account 501922/149-0104US.

Claims 1, 5, 7, 8, 13, 17, 19, 20, 25, 29, 30 and 35 have been amended. No claims have been cancelled or added in this Reply. Accordingly, claims 1-38 are currently pending.

Section 103 Rejections

The Examiner has rejected claims 1-38 as allegedly being unpatentable under 35 U.S.C. 103(a) over U.S. Patent 6,070,170 to Friske et al. (hereinafter Friske) in view of U.S. Patent Application Publication 20030135478 to Marshall et al. (hereinafter Marshall). Specifically, with respect to independent claim 1 the Examiner asserts that:

> Frisk discloses[] determining one or more portions of a target database that will be affected by the change command (See column 6 lines 5-9); creating one or more shadow portions of the determined one or more portions (See column 6 lines 25-27) swapping the one or more shadow portions for the determined one or more portions (See column 6 lines 42-44) wherein the act of creating and changing occur before the act of executing and further wherein said database update method does not cause a user outage (See column 6 lines 60-65) ... Marshall ... disclose[s] receiving a database change command (See paragraph 0037 "transactions make changes to the database"); [sic] changing the one or more shadow portions In [sic] accordance with the change command (See paragraph 0038); executing the change command against the target database (See paragraph 0043); [sic] wherein the act of creating and changing occur before the act of executing and further wherein said database update method does not cause a use outage ... [Concluding] ... [i]t would have been obvious to an artisan of ordinary skill in the pertinent art to have incorporated the teachings of Marshall into the system of Frisk. The modification would have been obvious because there is a desire to have a non-blocking database in order to minimize the unavailability of the database during updates and reorganizations (See Frisk column 2 lines 53-57). Office Action at pages 3-4.

The Examiner rejects each of independent claims 13 and 25 on the same grounds. Office Action at page 6.

1. US 6,070,170 to Friske et al. ("Friske")

Friske is directed to the "online reorganization of data contained in a database ... while allowing substantially uninterrupted access to the database." Friske at 1:26-30.[1] As described by Friske, "[o]ne problem ... [in large databases] is the physical location of the leaf pages often becomes quite scattered ... [resulting] ... in reduced performance." Friske at 1:63-2:3. To overcome this scattering effect, the data within the database "need to be reorganized periodically so that the logical and physical ordering between leaf pages and data pages better correspond." Friske at 2:5-8. Friske describes one technique to reorganize data within a database without causing a significant user outage. Friske at 5:64-6:67.

Accordingly, Friske is explicitly directed to the *reorganization of data within an existing database* and *not to making structural changes in the database itself*.

2. US Patent Application Publication 20030135478 to Marshall et al. ("Marshall")

As noted by Marshall, "[w]hen a transaction is performed such that data is added, updated and/or deleted from the database, the data may become disorganized or fragmented. When this occurs, response time to database queries can be compromised ... Accordingly, performance of the database can be improved by reorganization ... However, conventional systems take the database offline for reorganization." Marshall at [0008]. Similar to Friske, Marshall is directed to "a system and method that allows reorganization of databases such as IMS databases while allowing read and update activity to continue." Marshall at [0033]; see also Abstract and [0003].

Thus, Marshall (like Friske) is explicitly directed to the *reorganization of data within an existing database* and *not to making structural changes in the database itself*.

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1   As used herein, the notation A:B-C means column A, lines B to C. Similarly, the notation A:B-X:Y means column A, line B to column X, line Y.

3.   Discussion

The Examiner appears to consider the recited acts of *changing the one or more shadow portions in accordance with the change command* (independent claims 1, 13 and 25) as being equivalent to the acts of "reorganizing a database" as described by Friske and Marshall. As noted above, Friske and Marshall are *only* directed to modifying the data content of a database without causing a user outage. In contrast, the claimed invention is directed to making *structural changes* to an underlying database without causing a user outage. This distinction is described in the application as filed at paragraphs 0001, 0007, 0014, 0015, 0017, 0018, 0024 and FIGS. 3 ("database structure update process 300") and 4 (modify the database in accordance with a DB2® ALTER command, see element 415).

While the claim language as originally filed is believed to clearly distinguish the cited prior art *in the context of the specification*, independent claims 1, 13 and 25 have been amended to make this distinction explicit. In addition, dependent claims 7, 8, 19, 20, 29 and 30 have been amended to clarify and further distinguish the recited database change command (directed to structurally modifying a database) from the act of updating the database' s content (*i.e.*, data and/or index content).[2] Support for this latter amendment may be found in the application as filed at paragraphs 0016, 0018 and FIG. 4 (element 420).

In summary: (1) the claimed invention is directed to making structural changes in a database without causing a user outage; (2) Friske and Marshall are only directed to reorganizing data within an existing database structure; and (3) neither Friske or Marshall teach, describe or fairly suggest that their "reorganization" process is applicable to making structural changes in an underlying database. For at least these reasons, the combination of Friske and Marshall (alone or combined) fail to render the inventions recited in independent claims 1, 13 and 25 obvious under 35 U.S.C. 103.

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2   Dependent claims 5, 17 and 35 have been amended to correct grammatical errors. These amendments are not being made for any reason related to the patentability of the claimed subject matter.

Each of claims 2-12, 14-24 and 26-38 depend from one of independent claims 1, 13 and 25. Since each independent claim is patentable over the combination of Friske and Marshall as discussed above, each of the identified dependent claims are also allowable. Accordingly, it is respectfully requested that the Examiner withdraw this rejection and allow the claims.

CONCLUSIONS

Reconsideration of pending claims 1-38 in light of the above remarks and amendments is respectfully requested. If, after considering this reply, the Examiner believes that a telephone conference would be beneficial towards advancing this case to allowance, the Examiner is strongly encouraged to contact the undersigned attorney at the number listed.

/Coe F. Miles, Ph.D., J.D./   Date: <u>18 July 2006</u>
Reg. No. 38,559

Wong, Cabello, Lutsch, Rutherford & Brucculeri, L.L.P.

Customer No. 29855
20333 SH 249, Suite 600
Houston, Texas 77070

Voice: 832-446-2418
Mobile: 713-502-5382
Facsimile: 832-446-2458

Email: cmiles@counselIP.com